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FLOOD INSURANCE STUDY

TOWNSHIP OF HEREFORD, PENNSYLVANIA
BERKS COUNTY

MAY 3, 1990

Federal Emergency Management Agency

COMMUNITY NUMBER - 421379

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision (LOMR) process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components.

Initial Flood Insurance Study Effective Date: May 3, 1990

Flood Insurance Study Revised:

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FLOOD INSURANCE STUDY
TOWNSHIP OF HEREFORD, BERKS COUNTY, PENNSYLVANIA

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the Township of Hereford, Berks County, Pennsylvania, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates and assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this Flood Insurance Study are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were prepared by the U. S. Geological Survey (USGS) for the Federal Emergency Management Agency (FEMA), under Inter-Agency Agreement No. EMW-85-E-1823, Project Order No. 8. This work was completed in October 1988.

1.3 Coordination

On November 15, 1984, an initial Consultation and Coordination Officer's (CCO) meeting was held with representatives of FEMA, the township, and the USGS (the study contractor) to determine the streams to be studied by detailed methods.

On June 8, 1989, a final CCO meeting was held with representatives of FEMA, the township, and the study contractor to review the results of the study.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the Township of Hereford, Berks County, Pennsylvania. The area of study is shown on the Vicinity Map (Figure 1).

The following tabulation shows the limits of study for the streams studied by detailed methods.

Stream	Limits of Detailed Study
Perkiomen Creek	From the downstream corporate limits to a point approximately 3.3 miles upstream and from the corporate limits of the Township of Upper Milford to a point approximately 2.1 miles upstream
Tributary A to Perkiomen Creek	From its confluence with Perkiomen Creek to a point approximately 2.7 miles upstream
Tributary A to Tributary A to Perkiomen Creek	From its confluence with Tributary A to Perkiomen Creek to the upstream corporate limits
Tributary B to Tributary A to Perkiomen Creek	From its confluence with Tributary A to Perkiomen Creek to a point approximately 1,770 feet upstream
Tributary B to Perkiomen Creek	From its confluence with Perkiomen Creek to a point approximately 0.6 mile upstream
West Branch Perkiomen Creek	From a point approximately 400 feet downstream of the downstream corporate limits to a point approximately 3 miles upstream
Unnamed Tributary to West Branch Perkiomen Creek	From its confluence with West Branch Perkiomen Creek to a point approximately 90 feet upstream of the upstream corporate limits

The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction through October 1993.

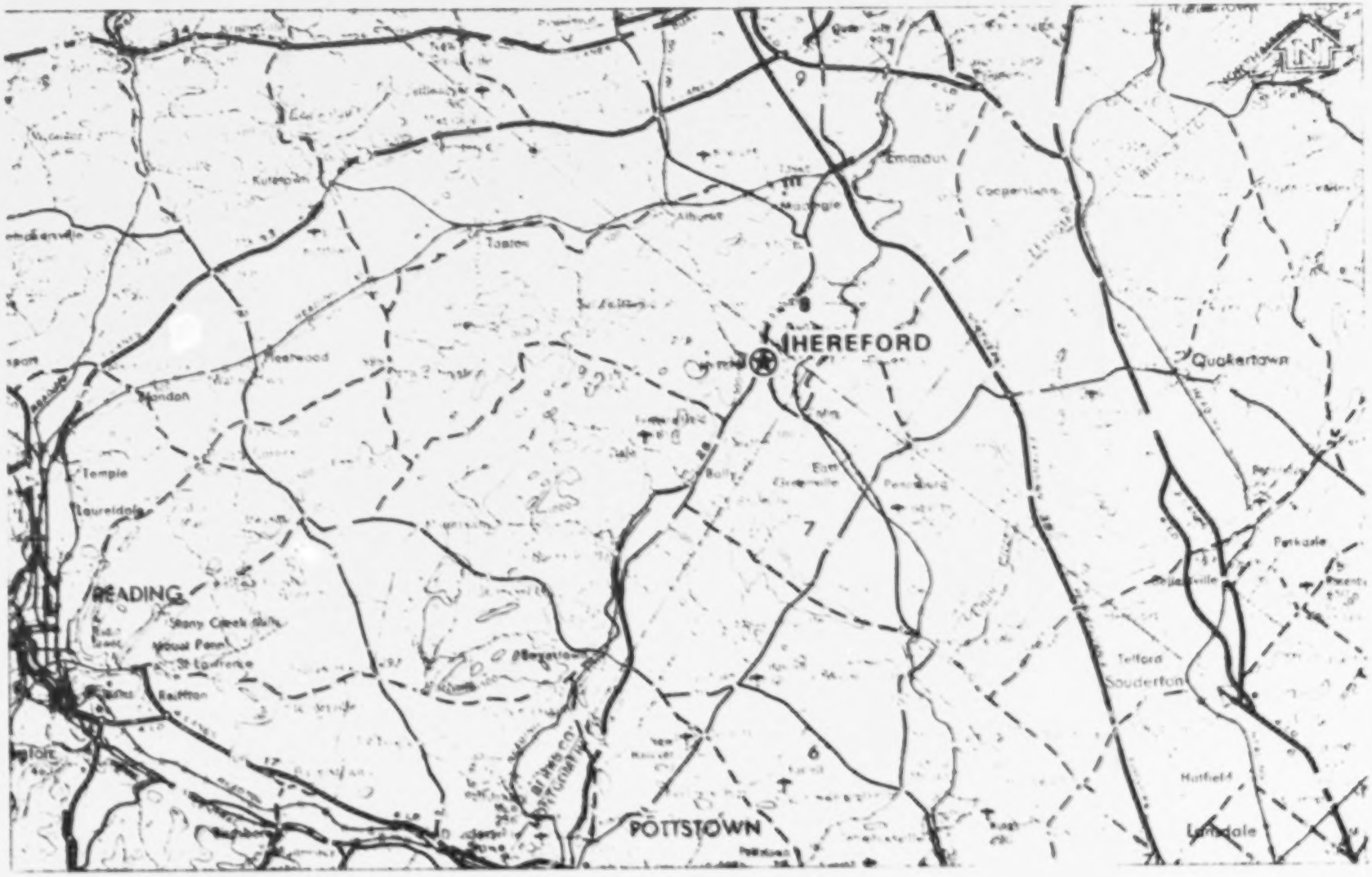


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA

(BERKS CO.)

APPROXIMATE SCALE

3

VICINITY MAP

The following streams were studied by approximate methods: the remaining portions of Perkiomen Creek, West Branch Perkiomen Creek, Tributary A to Perkiomen Creek, and Tributary B to Perkiomen Creek and their tributaries not included in the detailed analyses. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by, FEMA and the Township of Hereford.

2.2 Community Description

The Township of Hereford is located in the eastern portion of Berks County, in southeastern Pennsylvania, approximately 10 miles southwest of Allentown. It is bordered by the Township of Lower Macungie to the north, the Township of Upper Milford to the northeast, the Township of Upper Hanover to the southeast, the Township of Washington to the south, the Township of District to the west, and the Township of Longswamp to the northwest.

2.3 Principal Flood Problems

Major floods cause localized inundation of structures along Perkiomen Creek, West Branch Perkiomen Creek, and on several tributaries to these streams.

2.4 Flood Protection Measures

No flood-control structures have been constructed to alleviate flooding within the Township of Hereford.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. A flood event of a magnitude which is expected to be equaled or exceeded once on the average during any 100-year period (recurrence interval) has been selected as having special significance for floodplain management and for flood insurance rates. This event, commonly termed the 100-year flood, has a 1 percent chance of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each flooding source studied in detail affecting the community.

The flood-frequency discharge values for the streams studied by detailed methods were determined using regional regression equations developed in USGS Water-Resources Investigations 81-21 (Reference 1).

A summary of the drainage area-peak discharge relationships for the streams studied by detailed methods is shown in Table 1, "Summary of Discharges."

TABLE 1 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGE (cfs) 100-YEAR
PERKIOMEN CREEK		
At lower corporate limits	14.0	5,600
At Legislative Route 06119 bridge, at Village of Hereford	6.02	4,680
At downstream corporate limits of Township of Upper Milford	5.26	4,160
At upstream corporate limits of Township of Upper Milford	3.21	2,700
Above confluence of Tributary B to Perkiomen Creek	1.31	1,230
At Mulberry Road, at Village of Harlem	0.91	890
TRIBUTARY A TO PERKIOMEN CREEK		
At confluence with Perkiomen Creek	5.00	3,980
Above confluence of Tributary A to Tributary A to Perkiomen Creek	2.45	2,130
Above confluence of Tributary B to Tributary A to Perkiomen Creek	1.32	1,240
At a point approximately 2,000 feet upstream of intersection of Bertovia and Huffs Church Road	0.71	720
TRIBUTARY A TO TRIBUTARY A TO PERKIOMEN CREEK		
At confluence with Tributary A to Perkiomen Creek	1.69	1,530
TRIBUTARY B TO TRIBUTARY A TO PERKIOMEN CREEK		
At confluence with Tributary A to Perkiomen Creek	0.42	450

TABLE 1 - SUMMARY OF DISCHARGES - continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGE (cfs) 100-YEAR
TRIBUTARY B TO PERKIOMEN CREEK		
At confluence with Perkiomen Creek	1.25	1,180
WEST BRANCH PERKIOMEN CREEK		
At downstream corporate limits	9.56	6,470
Above confluence of tributary approximately 500 feet upstream of corporate limits	8.76	6,200
Above confluence of Unnamed Tributary to West Branch Perkiomen Creek	5.16	4,090
At Huffs Church Road	3.84	3,160
Above confluence of unnamed tributaries approximately 2,000 feet north of Huffs Church Road	1.31	1,230
Above confluence of unnamed tributary at Old Mill Road	0.75	750
At a point approximately 16,080 feet upstream of the downstream corporate limits	0.73	730
UNNAMED TRIBUTARY TO WEST BRANCH PERKIOMEN CREEK		
At confluence with West Branch Perkiomen Creek	3.18	2,670

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Cross sections were field surveyed and were located at close intervals above and below bridges and culverts in order to compute the significant backwater effects of these structures. All bridges, dams, and culverts in the community were field surveyed to obtain elevation data and structural geometry.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1) and the Flood Insurance Rate Map (Exhibit 2) where applicable.

Water-surface elevations of floods of the selected recurrence intervals for Perkiomen Creek, from the corporate limits of the Township of Upper Hanover to the corporate limits of the Township of Upper Milford; and for Tributary A to Perkiomen Creek, from its confluence with Perkiomen Creek to State Route 100 were computed by modeling channel and bridge hydraulics with the USGS WSPRO step-backwater computer program (References 2 and 3).

For the remaining streams studied by detailed methods and for the remaining portions of Perkiomen Creek and Tributary A to Perkiomen Creek, normal depths of flooding for the 100-year recurrence interval were estimated from the regional relationship between drainage area and flood depth prepared by the USGS (Reference 4). This relationship was developed by means of regional regression analyses of basin areas and 100-year within-channel depths observed at stream gages. Depths were adjusted on the basis of hydraulic calculations to account for increased depth due to backwater from hydraulic structures, such as bridges and culverts (References 2, 3, 5, 6, and 7). Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence interval.

Channel roughness factors (Manning's "n") used in the hydraulic computations were assigned on the basis of engineering judgment and field inspection of the floodplain areas. The channel "n" values for the streams studied by detailed methods ranged from 0.035 to 0.038, and the overbank "n" values ranged from 0.040 to 0.060.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in this study are shown on the maps; the descriptions of the marks are presented in Elevation Reference Marks (Exhibit 3).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each Flood Insurance Study provides 100-year flood elevations and delineations of the 100-year floodplain boundaries to assist communities in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. For the streams studied in detail, the 100-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000 with a contour interval of 20 feet (Reference 8).

For the streams studied by approximate methods, the 100-year floodplain boundaries were delineated using the Flood Hazard Boundary Map for the Township of Hereford (Reference 9).

The 100-year floodplain boundaries are shown on the Flood Insurance Rate Map (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE). Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced.

The area between the floodway and 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2.

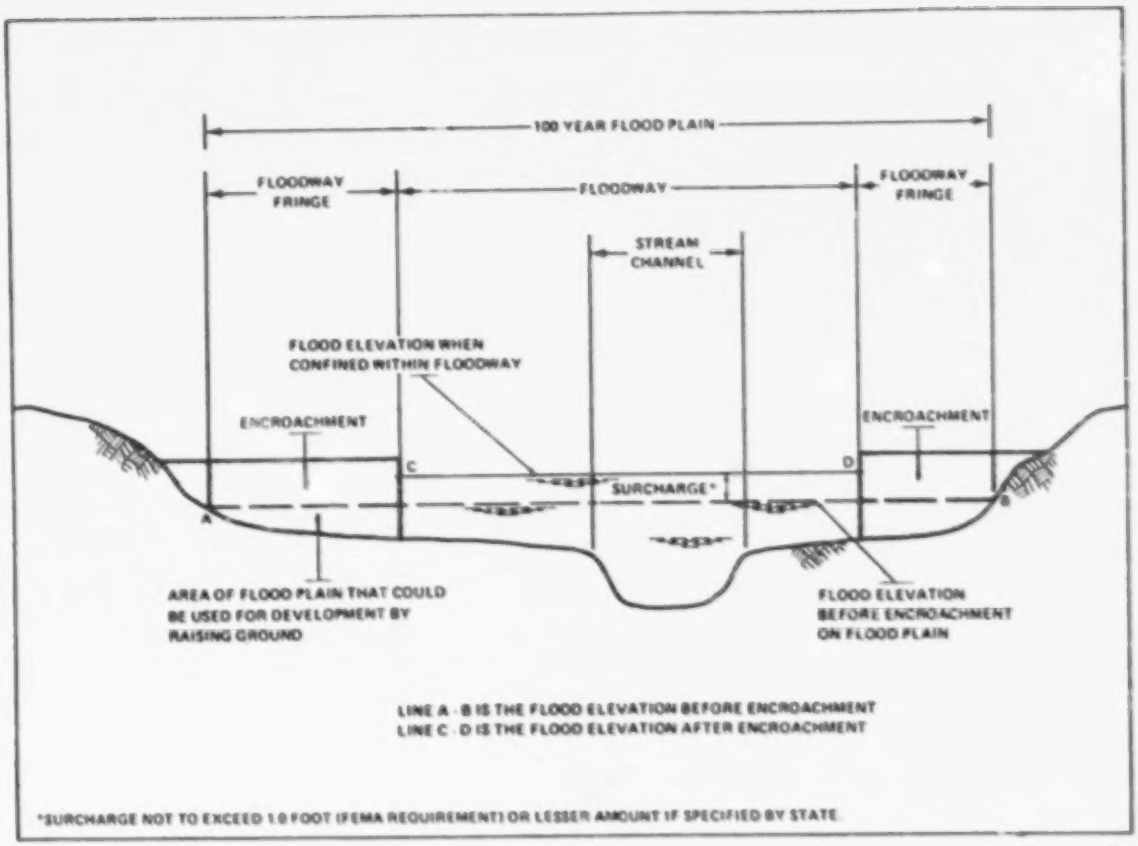
No floodways were calculated as part of this study.

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN
LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT
*SURCHARGE NOT TO EXCEED 1.0 FOOT (FEMA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

FLOODWAY SCHEMATIC

Figure 2

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-depths derived from the detailed hydraulic analyses are shown within this zone.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, and to areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The Flood Insurance Rate Map is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 100-year floodplain. The locations of selected cross sections used in the hydraulic analyses are shown where applicable.

7.0 OTHER STUDIES

Flood Insurance Studies have been prepared for the Townships of Upper Milford, Lower Macungie, Upper Hanover, and Washington (References 10, 11, 12, and 13). The results of this study are in exact agreement with the results of those studies.

A Flood Insurance Study is currently being prepared for the Township of Longswamp (Reference 14). The results of that study will be in exact agreement with the results of this study.

Due to its more detailed nature, this study supersedes the Flood Hazard Boundary Map for the Township of Hereford (Reference 9).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting FEMA, the Natural and Technological Hazards Division, Liberty Square Building (Second Floor), 105 South Seventh Street, Philadelphia, Pennsylvania 19106.

9.0 BIBLIOGRAPHY AND REFERENCES

1. U. S. Department of the Interior, Geological Survey, Water-Resources Investigations 81-21, Evaluation of the Streamflow-Data Program in Pennsylvania by H. N. Flippo, Jr., Harrisburg, Pennsylvania, 1982.

2. U. S. Federal Highway Administration, Report FHWA/RD-86/108, Bridge Waterways Analysis Model/Research Report by J. O. Shearman, W. H. Kirby, V. R. Schneider, and H. N. Flippo, Jr., Washington, D. C., 1986.

3. National Technical Information Service, Bridge Waterways Analysis Model/User's Instructions by J. O. Shearman, W. H. Kirby, and V. R. Schneider, Springfield, Virginia, 1985.

4. U. S. Department of the Interior, Geological Survey, Water-Resources Investigations 86-4195, Technique for Estimating Depths of 100-year Floods in Pennsylvania by H. N. Flippo, Jr., Harrisburg, Pennsylvania, 1986.

5. U. S. Department of the Interior, Geological Survey, Techniques of Water-Resources Investigations, Measurement of Peak Discharge at Culverts by Indirect Methods by G. L. Bodhaine, Washington, D. C., 1968.

6. U. S. Department of the Interior, Geological Survey, Techniques of Water-Resources Investigations, Measurement of Peak Discharge at Width Contractions by Indirect Methods by H. F. Matthai, Washington, D. C., 1967.

7. U. S. Department of the Interior, Geological Survey, Techniques of Water-Resources Investigations, Measurement of Peak Discharge at Dams by Indirect Methods by Harry Hulsing, Washington, D. C., 1976.

8. U. S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 20 Feet: East Greenville, Pennsylvania, 1956, Photorevised 1973; Manatawny, Pennsylvania, 1957, Photorevised 1973.

9. U. S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Township of Hereford, Berks County, Pennsylvania, November 15, 1974.

10. Federal Emergency Management Agency, Federal Insurance Administration, Flood Insurance Study, Township of Upper Milford, Lehigh County, Pennsylvania, Washington, D. C., May 19, 1981.

11. U. S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, Township of Lower Macungie, Lehigh County, Pennsylvania, Washington, D. C., February 2, 1977.

12. Federal Emergency Management Agency, Flood Insurance Study, Township of Upper Hanover, Montgomery County, Pennsylvania, Washington, D. C., January 20, 1982.

13. Federal Emergency Management Agency, Flood Insurance Study, Township of Washington, Berks County, Pennsylvania, Washington, D. C., June 1, 1984.

14. Federal Emergency Management Agency, Flood Insurance Study, Township of Longswamp, Berks County, Pennsylvania (Unpublished).

EXHIBIT 3 - ELEVATION REFERENCE MARKS

Reference Mark	FIRM Panel	Elevation (Feet NGVD)	Description of Location
RM 1	05	801.03	Railroad spike set in B. T. Commonwealth of Pennsylvania pole No. 3 on southeast side of Mulberry Hill Road, approximately 1,500 feet southwest of Five Points Road in Village of Harlem.
RM 2	05	773.56	Standard disk set in rock outcrop at crossroads at Village of Harlem, approximately 62.5 feet west of Mulberry Hill Road and approximately 24 feet south of Five Points Road.
RM 3	05	738.13	Railroad spike set in Rock Elm at northeast end of pond on Perkiomen Creek behind stone house on north side of Five Points Road.
RM 4	05	721.62	Chiseled square set on west end of 5.5-foot diameter concrete culvert under Hollyberry Road on Tributary B to Perkiomen Creek, approximately 450 feet north of Township Road.
RM 5	05	658.24	Chiseled square set on west concrete headwall of 8-foot diameter steel culvert under Deerhill Road.
RM 6	05	620.43	Railroad spike set in 30-inch oak tree, approximately 30 feet north of centerline of Sigmund Road and approximately 27 feet east of Berks-Lehigh county boundary monument.
RM 7	05	472.07	Railroad spike set in east face of 20-inch tulip tree, approximately 40 feet west of State Routes 100 and 29 and approximately 120 feet south of side road of State Routes 100 and 29.
RM 8	05	444.39	Chiseled square on southwest corner of concrete bridge abutment of access road over Perkiomen Creek.
RM 9	05	403.59	PDH disk set in southeast wing wall of State Route 100 bridge over Perkiomen Creek.

EXHIBIT 3 - ELEVATION REFERENCE MARKS - continued

Reference Mark	FIRM Panel	Elevation (Feet NGVD)	Description of Location
RM 10	05	376.40	Railroad spike set in east face of 18-inch hickory tree on south side of private drive on west side of Shiffert Road.
RM 11	05	371.00	Railroad spike set in MET Ed GPU DH-781 pole next to Palm Boat and Camp Sales on east side of Clayton Road.
RM 12	05	357.71	Chiseled square set on southeast abutment of riveted steel bridge on Township Route 887 over Perkiomen Creek.
RM 13	05	479.59	Chiseled square on top of east end of oval concrete culvert pipe under Bertovia Road on Tributary A to Perkiomen Creek.
RM 14	05	431.56	Railroad spike set in pole No. 5 on west side of Church Hill Road approximately 1,350 feet north of Huffs Church Road.
RM 15	05	395.09	Chiseled square set on top of southwest wing wall of State Route 100 bridge over Tributary A to Perkiomen Creek.
RM 16	05	382.09	Chiseled square set on southeast corner of Toll Gate Road bridge over Tributary A to Perkiomen Creek.
RM 17	05	409.18	Chiseled square set on southeast wing wall of Kutztown Road bridge over Tributary A to Tributary A to Perkiomen Creek.
RM 18	05	769.09	USGS disk in top of concrete post approximately 41 feet northeast of intersection of Old Mill Road and Hunter Forge Road.
RM 19	05	754.00	Railroad spike in pole No. NEFED DM-626 on west side of Hunter Forge Road approximately 0.25 mile north of Huffs Church Road.
RM 20	05	748.21	Standard disk, stamped H 181 1942 (reset), in southwest end of new concrete bridge abutment on Huffs Church Road over West Branch Perkiomen Creek.

EXHIBIT 3 - ELEVATION REFERENCE MARKS - continued

Reference Mark	FIRM Panel	Elevation (Feet NGVD)	Description of Location
RM 21	10	720.25	Railroad spike set in south face of 36-inch ash tree located on west side of dilapidated dam on West Branch Perkiomen Creek.
RM 22	10	664.70	Chiseled corner cut on southwest corner of Camp Menchmill Road bridge over West Branch Perkiomen Creek.
RM 23	10	619.85	Chiseled square on northeast corner of Airport Road bridge over West Branch Perkiomen Creek.
RM 24	10	594.28	Railroad spike seet in 24-inch sycamore tree on west side of Forge Dale Road approximately 0.1 mile south of Dairy Lane and Forge Dale Road intersection.

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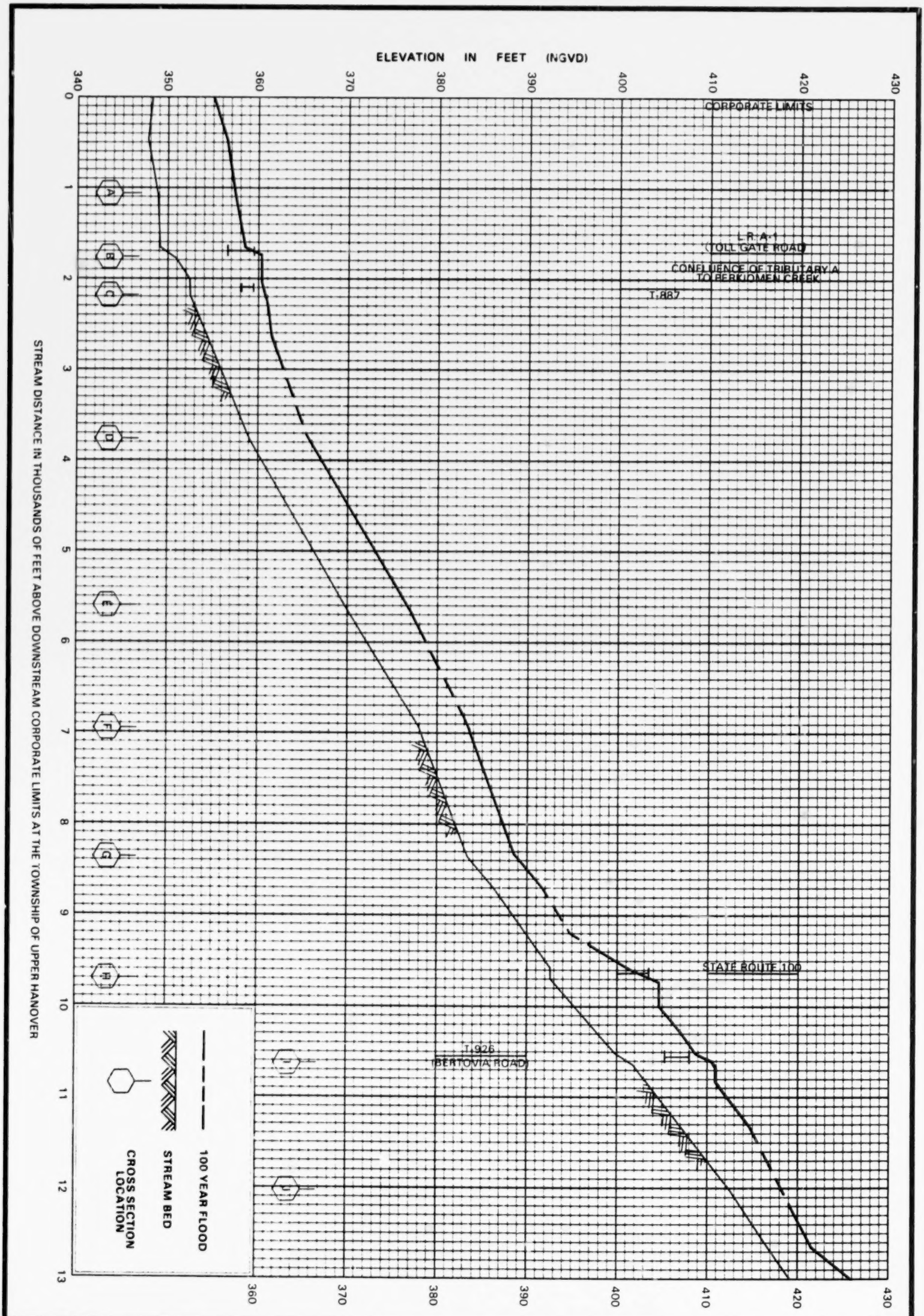


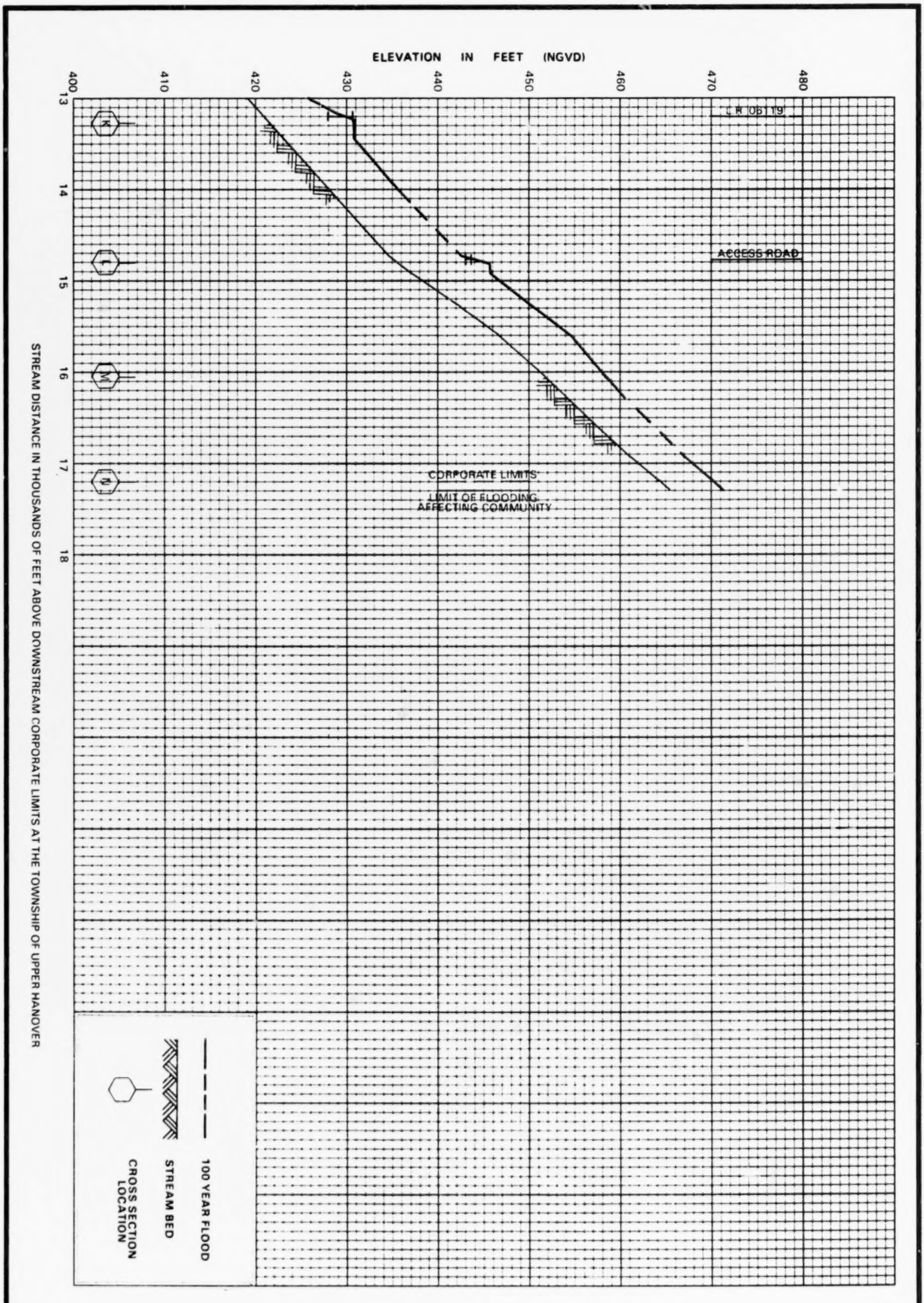
FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

FLOOD PROFILES

PERKIOMEN CREEK

01P



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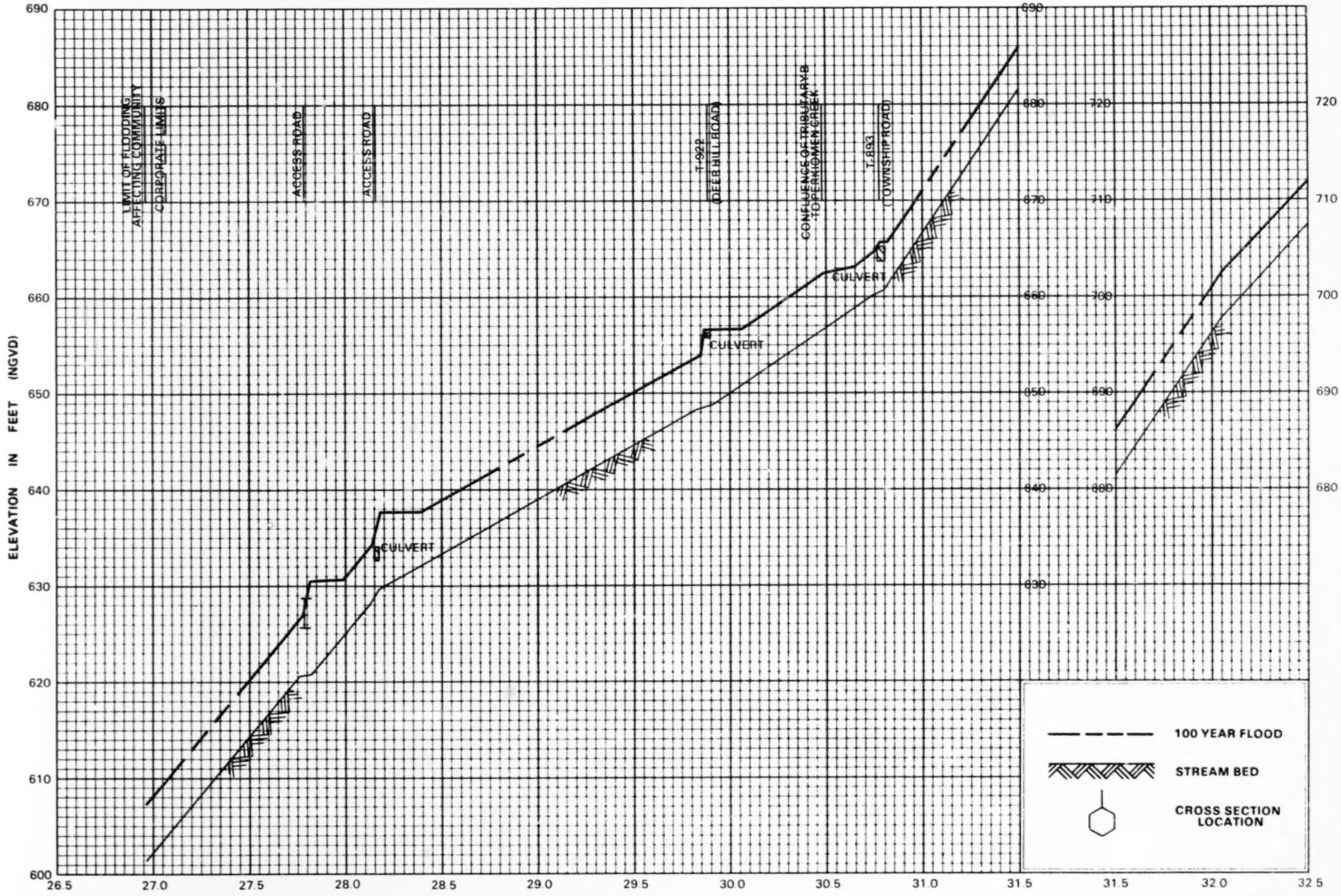
02P	FEDERAL EMERGENCY MANAGEMENT AGENCY TOWNSHIP OF HEREFORD, PA (BERKS CO.)	FLOOD PROFILES PERKIOMEN CREEK



FLOOD PROFILES

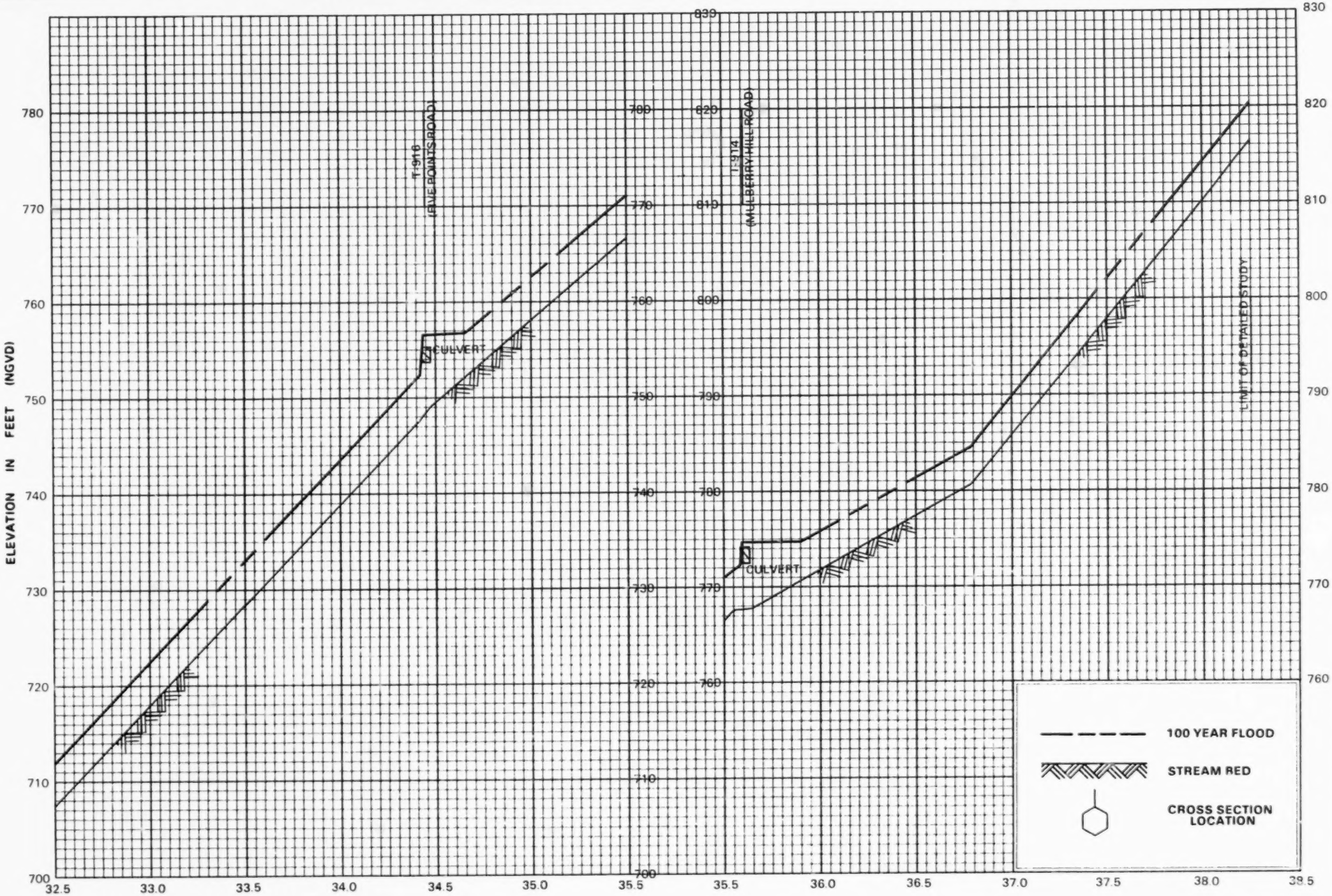
PERKIOMEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA

(BERKS CO.)

03P



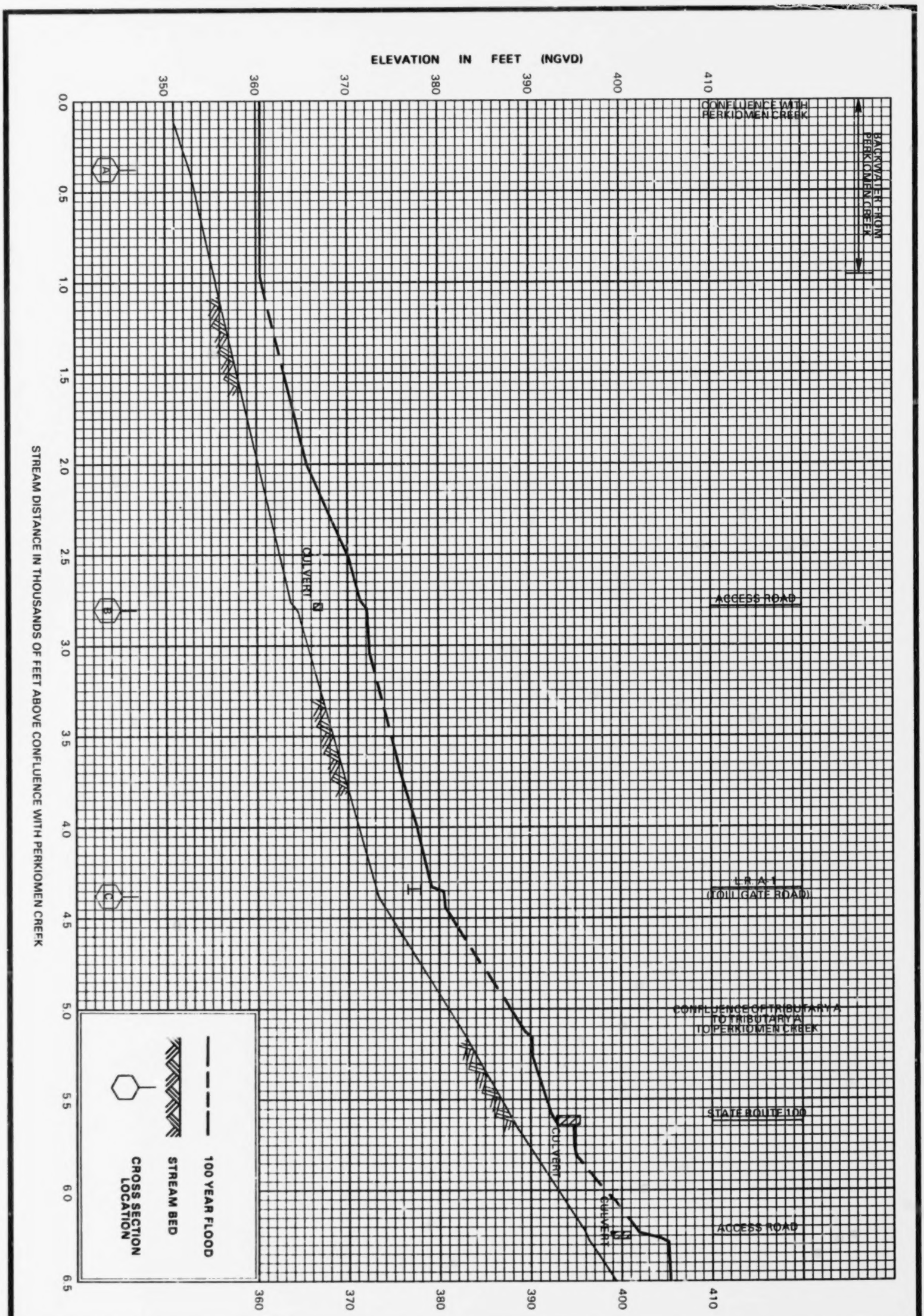
FLOOD PROFILES

PERKIOMEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

04P



05P

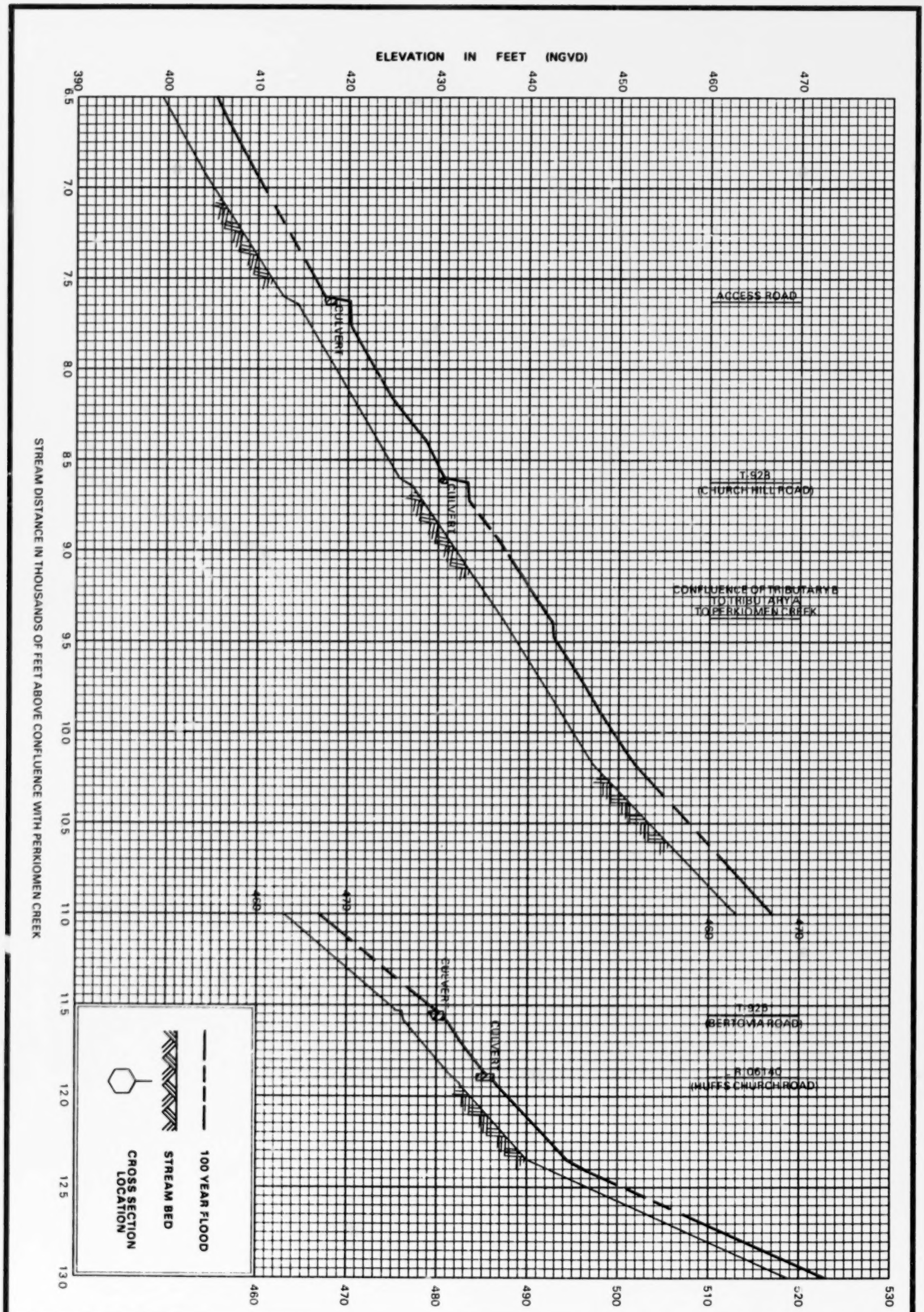
FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF PEREFORD, PA

(BER 0.)

FLOOD PROFILES

TRIBUTARY A TO PERKIOMEN CREEK



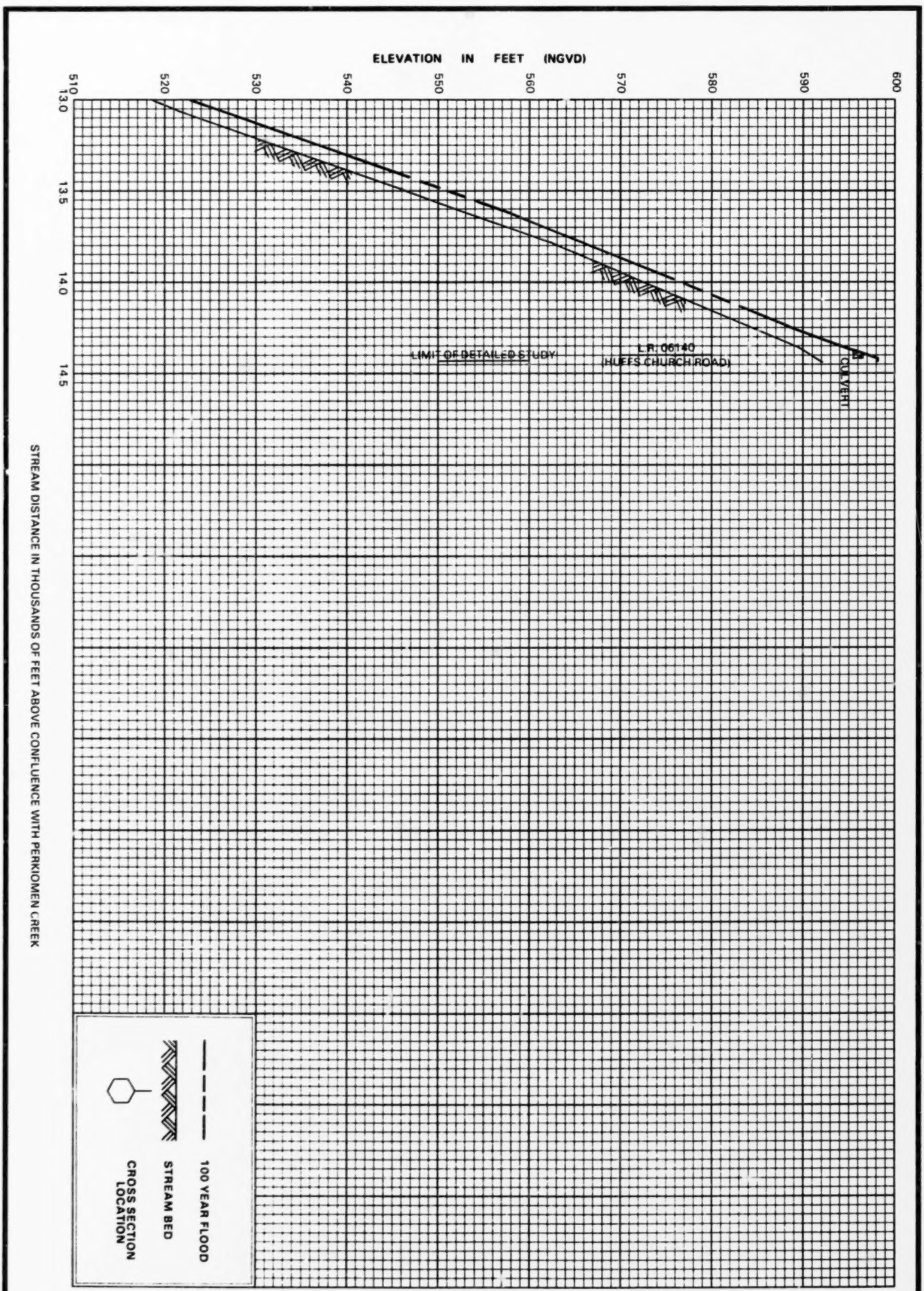
FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

06P

FLOOD PROFILES

TRIBUTARY A TO PERKIOMEN CREEK



07P	FEDERAL EMERGENCY MANAGEMENT AGENCY TOWNSHIP OF HEREFORD, PA (BERKS CO.)	FLOOD PROFILES TRIBUTARY A TO PERKIOMEN CREEK

22

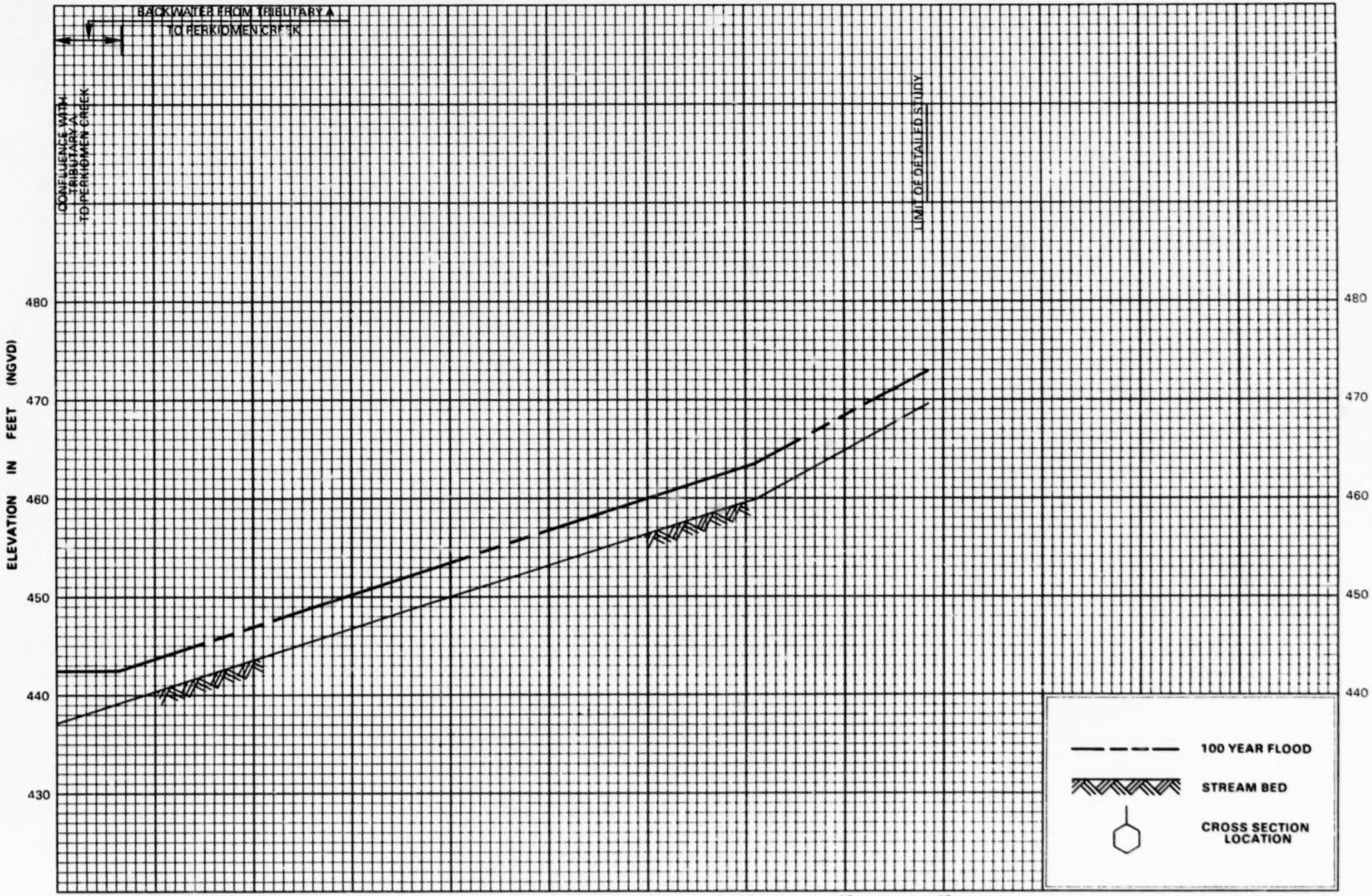
FLOOD PROFILES

TRIBUTARY A TO TRIBUTARY A TO PERKIOMEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

08P



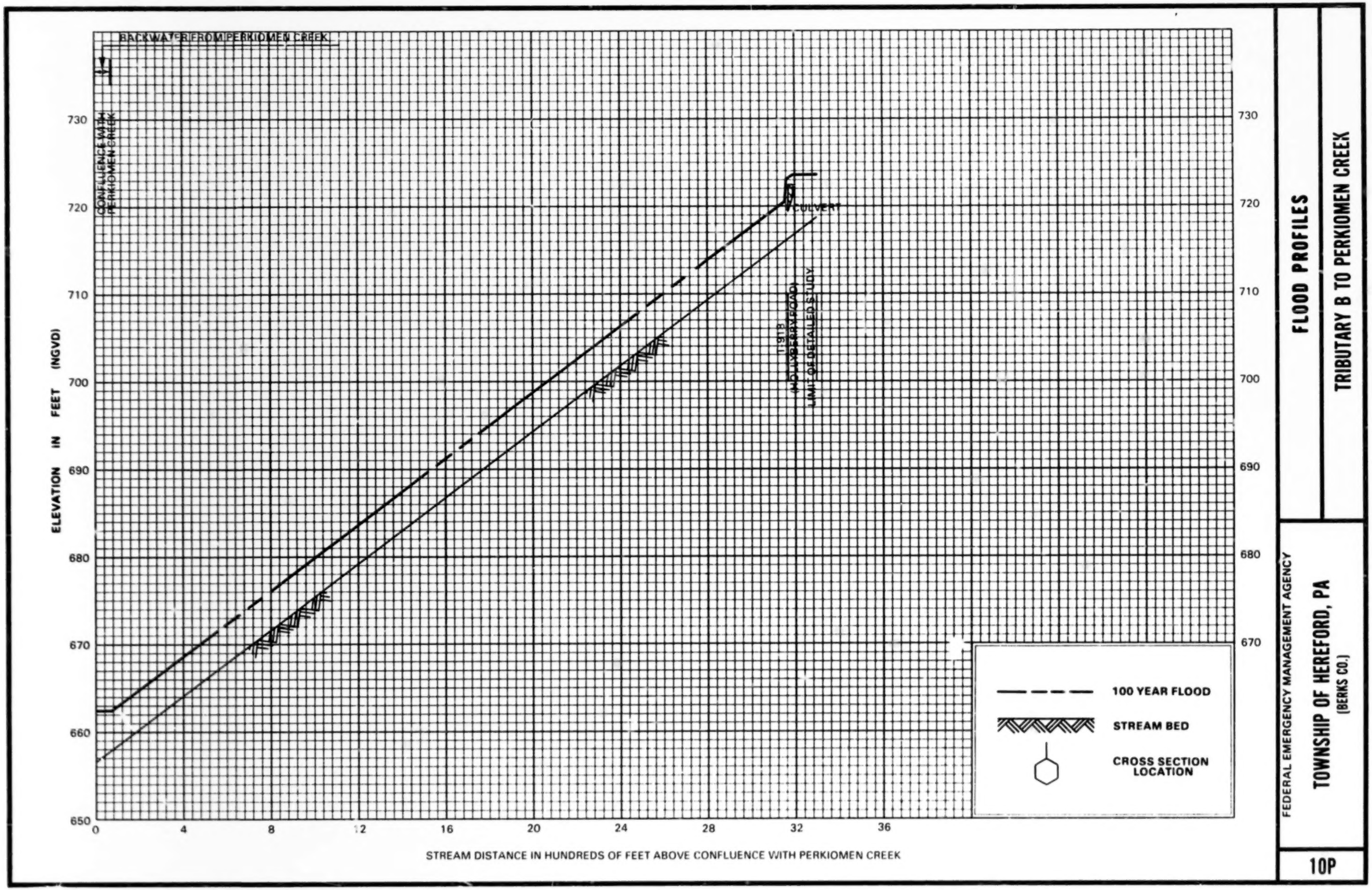
FLOOD PROFILES

TRIBUTARY B TO TRIBUTARY A TO PERKIOMEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

09P



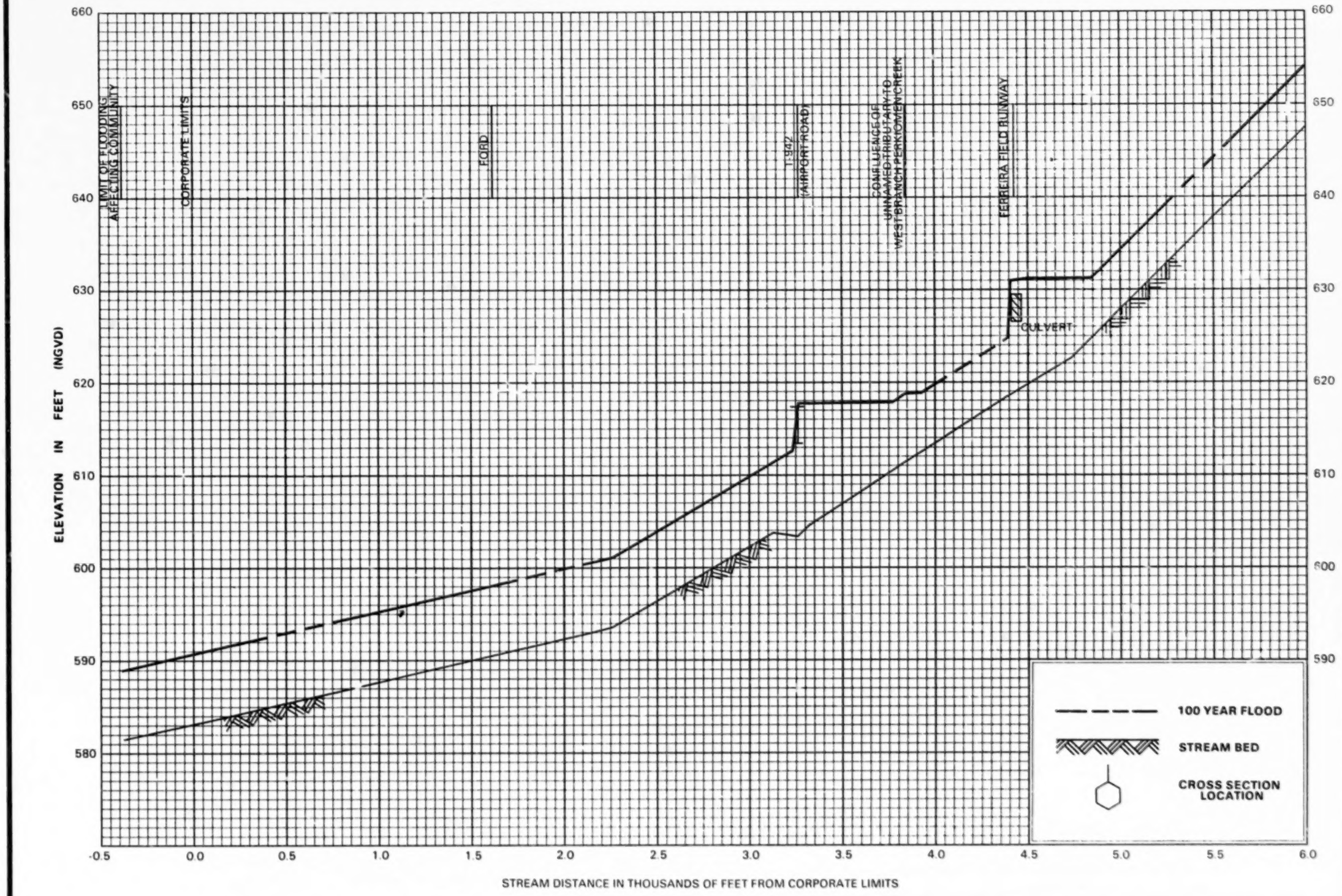
FLOOD PROFILES

TRIBUTARY B TO PERKIOMEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

10P



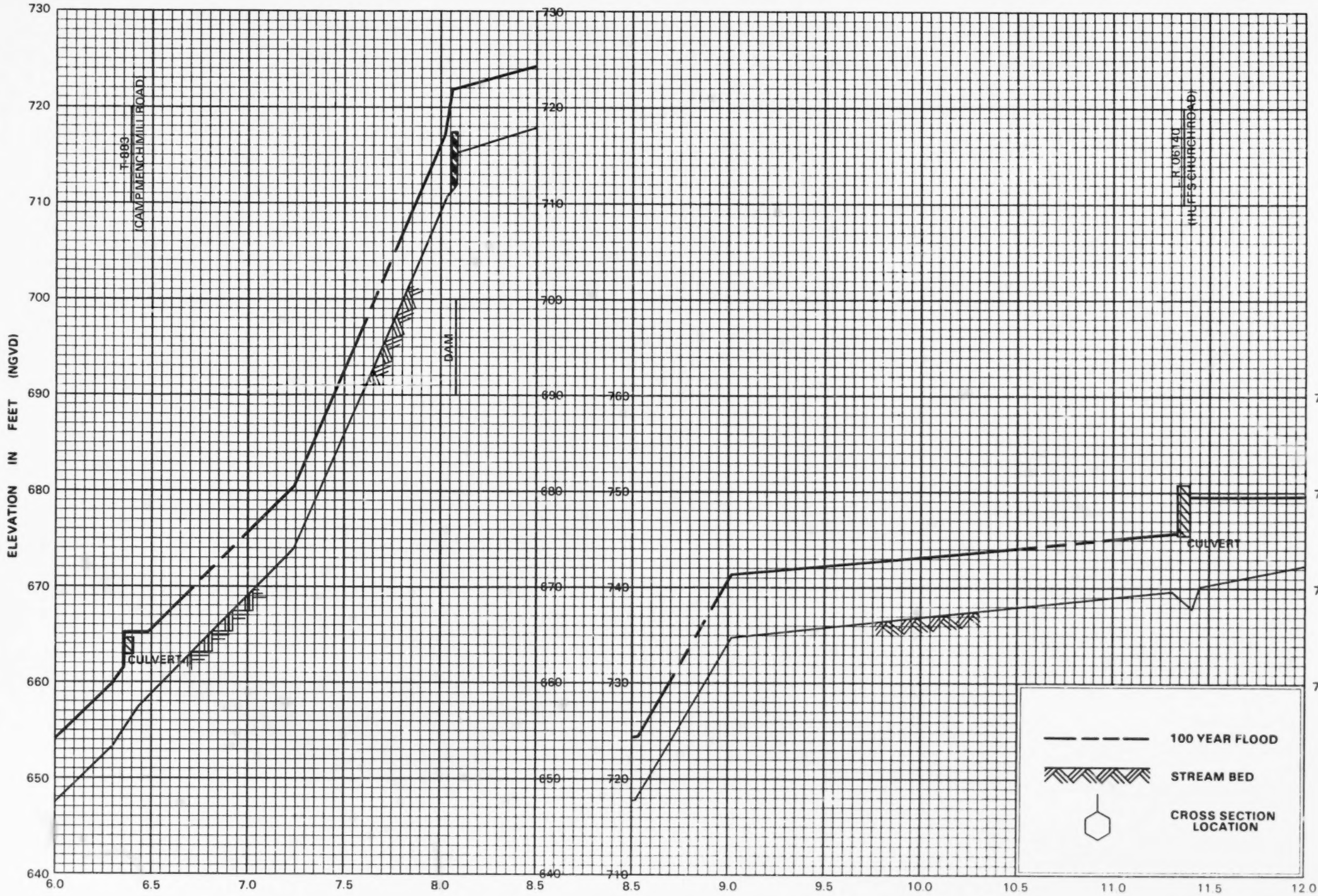
FLOOD PROFILES

WEST BRANCH PERKIOMEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

11P



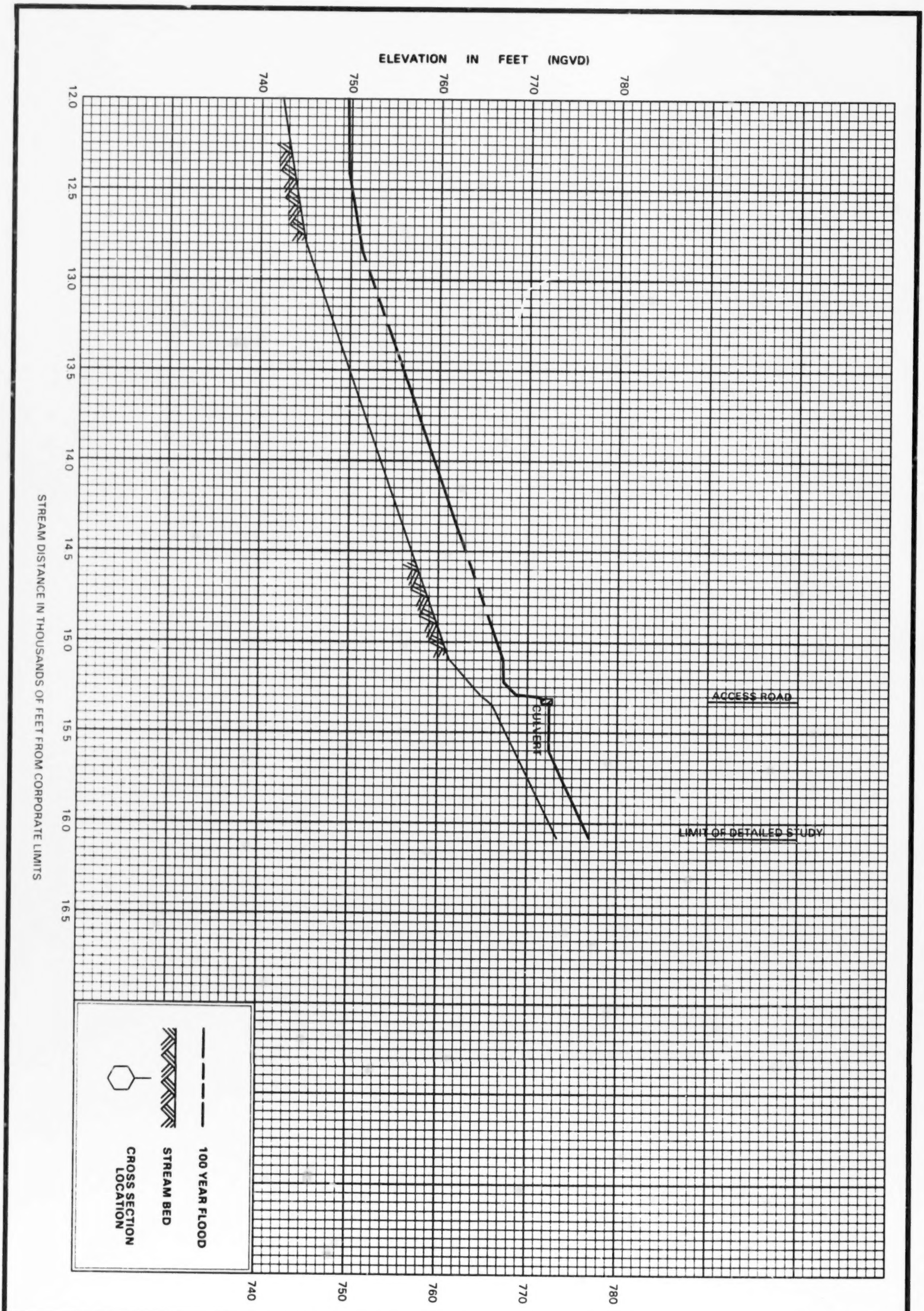
FLOOD PROFILES

WEST BRANCH PERKIOMEN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

12P



28

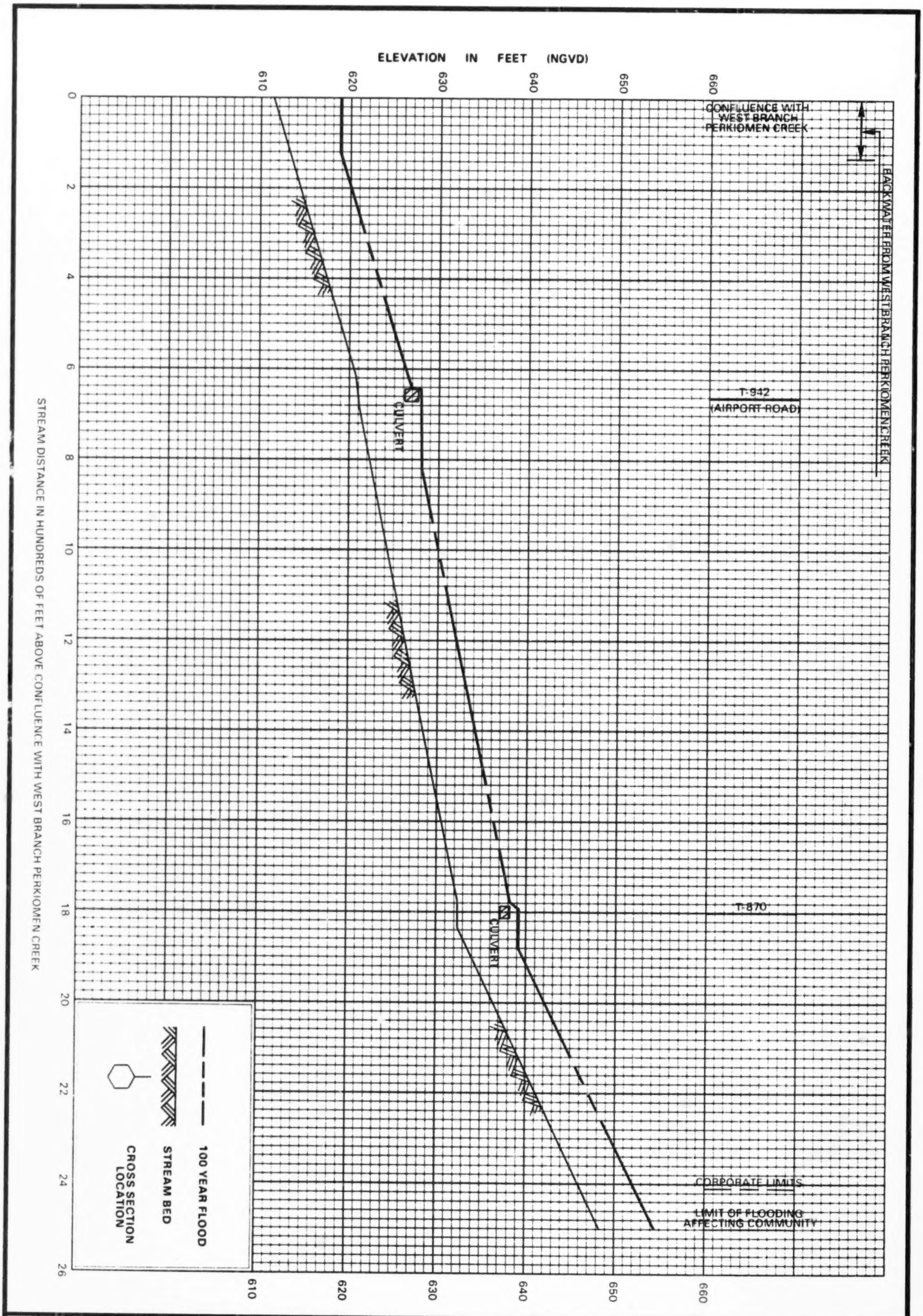
13P

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

FLOOD PROFILES

WEST BRANCH PERKIOMEN CREEK



29

14P

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWNSHIP OF HEREFORD, PA
(BERKS CO.)

FLOOD PROFILES

UNNAMED TRIBUTARY TO WEST BRANCH PERKIOMEN CREEK